DOCUMENT RESUME

ED 292 827 TM 011 205

AUTHOR Bauer, Allison J.
TITLE Academic Performance in English: A Report and Comprehensive Examination of High School Grades, Achievement Test Scores, College Level Placement, and Subsequent College Course Grades.
PUB DATE [87]
NOTE 62p.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Academic Achievement; Academic Persistence; Achievement Tests; *College English; College Freshmen; Educational Assessment; Grade Point Average; Grades (Scholastic); Higher Education; Predictive Measurement; *Remedial Instruction; Sex Differences; Student Motivation; *Student Placement
IDENTIFIERS *American College Testing Program

ABSTRACT

The need for remedial English education among college freshmen has increased, and there exists no standardized approach to proficiency assessment and placement among institutions of higher education. After completing freshmen English courses, 922 students attending a four-year university were assessed to determine accurate variables for use in English placement. Regression analysis involving many intellective and non-intellective variables revealed that overall grade point average accounted for a greater amount of variance in grades than did American College Test scores and English grade point average. An analysis of variance showed significant gender differences in English grades, and separate prediction equations were derived from regression analyses in order to resolve the under-prediction of females. In addition, different placement variables emerged after gender differentiation. Analysis involving many variables produced the strongest combination for proficiency assessment and level placement; however, variance in grades outside this combination was large. It is recommended that the variables of persistence and motivation be investigated. (Author/TJH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED292827

Academic Performance in English: A Report and Comprehensive Examination of High School Grades, Achievement Test Scores College Level Placement, and Subsequent College Course Grades

Allison J. Bauer

The University of Alabama in Huntsville

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Allison J. Bauer

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Running Head: ACADEMIC PERFORMANCE IN ENGLISH

TM 011 205

Abstract

The need for remedial education among college freshmen has increased and there exists no standardized approach to proficiency assessment and placement among institutions of higher education. After completing freshman English 922 students attending a four year university were assessed to determine accurate variables for use in English placement. Regression analysis involving many intellective and non-intellective variables revealed that overall GPA accounted for a greater amount of variance in grades than ACT scores and English GPA. An analysis of variance showed significant gender differences in English grades and separate prediction equations were derived from regression analyses in order to resolve the underprediction of females. In addition, different placement variables emerged after gender differentiation. Analysis involving many variables produced the strongest combination for proficiency assessment and level placement, however variance in grades outside this combination was large. It was recommended that the variables of persistence and motivation be investigated.

Academic Performance in English: A Report and Comprehensive Examination of High School Grades, Achievement Test Scores College Level Placement, and Subsequent College Course Grades

In the United States there has been an emphasis on access to higher education during the last two decades. While this philosophy has opened the door for many individuals who would otherwise be denied admission to college, problems have developed within the higher educational system concerning student underpreparedness. Myers (1983) discussed this problem and stated that students with low aptitude in a subject area, as evidenced by low achievement test scores and low high school grades, are now admitted to college within remedial programs to improve basic skills before beginning college-level work. This is the main concern facing educators in the subject area of English. Proficiency has dropped in reading and writing skills and the need for remedial education in the subject area of English has increased both in high school and college.

The subject matter and educational objectives of the subject area of English have remained constant.

Students should gain a high level of comprehension of the English language so that mastery of communicative skills in both reading and writing the language is optimized in consideration of individual potential. However the notion, now fact, of remediation in higher education has caused much debate. Anxiety is created in many academicians who fear lowering educational quality and standards by admitting remedial students and developing a remedial program. In this case a clear definition of the term "remedial student" is necessary: a student of average or above average intelligence who has not reached a level of performance, in a given subject area, considered to be functional in college-level work. These individuals may possess the same achievement potential as students working on higher levels, but circumstannces beyond control of the remedial student have prevented him or her from advancement.

Piaget's conception of an academic model of learning learning held that education builds upon itself and is composed of a vertical structure of increasing complexity. Academia places the acquisition of skill within each level as the primary aim toward the goal of performance success or mastery of a subject area. In

academic terms, acquisition of skill within each level is analogous to the notion of building blocks (Figure 1) with the supposition that a missing block will cause the structure to be weak in it's ability to support future blocks. This is a dynamic interdependent structure with variable forces acting on it. Motivational and self-esteem status and the cumulative effects over time, consistency of educational quality over time, and the multi-combinational social context in which a student learns are important (i.e. race, sex, socio-economic status, parental education, nutrition, geographic location). Subjectively interrelated variables such as these can cause a lack of actualization of the potential of a student in an educational system that is itself far from perfect.

Insert Figure 1 About Here

Assessment and placement for beginning college-level work in English has become complex as Abraham (1987) has found in a recent survey of 489 colleges and universities. The findings indicated that no continuity exists among institutions' methods of assessment and placement for freshman students. In the

subject area of English, the respondents were revealed to be using 31 different tests for reading and 30 different tests for writing. In addition, the ACT English sub-test score, used frequently for writing skills assessment, had a cut-off range from the fifth percentile to the fifty-first percentile. This finding shows that there is a lack of agreement on what constitutes college-level work in English, as well as a severe lack of consensus among institutions about the variables for use in English placement.

In an essay on objective testing of English composition (Palmer, 1966) it was stated that all purpose tests were absurd in meeting and accomplishing objectives that would accurately predict student performance. Palmer called for carefully designed objective and semi-objective tests tailored to fulfill specific needs in testing. Since that time many instruments have been developed to assess student ability as reflected in the survey by Abraham (1987). Some tests are designed to identify specific deficiencies like the DTLS (Snowman, Leitner, Snyder, and Lockhart, 1980) and the BSE (Dwinell, 1985). Others classify large numbers of students into homogeneous groups like the ACT English sub-test, while

others are used as a means of assessing cumulative performance like the English grade point average and overall grade point average from high school. Numerous validation and comparison studies have been done using the tests and the results show that individualized tests only marginally enhance the predictive accuracy of the traditional measures for placement, but the traditional measures of English placement often leave a large amount of unaccountable variance in student grades.

In an attempt to account for the wide variability in grades, research in the past and present has been designed to investigate student characteristics and college performance. Lavin (1965) cites many studies of academic prediction showing the relationship between student grades in a subject area and predictors involving both intellective and non-intellective measures. He pointed out that the use of social/personality measures along with traditional predictor variables may improve prediction accuracy and serve as a guide in academic counseling. Objective measurements, such as ACT scores and high school grades, when treated as strong independent variables, stand as the decisive measures of the ability of a

student to perform. But, these measures may in fact be only variables dependent upon the human condition from which they come.

A recent study (Grabe and Latta, 1981) investigated achievement motivation and persistence in a subject area while controlling for aptitude. Results showed that the relationship between academic motivation and academic achievement was indirectly determined by persistence and that regardless of ability persistence was the key to success. Another study investigated study habits in improving grade prediction along with the use of ACT sub-test scores and high school grades. It was found that study habits could account for only three percent of the variance in student grades in addition to these measures (Wikoff and Kafka, 1981). Watkins (1986) investigated learning processes by using a recently developed inventory and found a slight improvement in ability assessment when used with ACT sub-test scores.

The majority of research however, centers around validating the use of traditional prediction measures and in most colleges and universities these measures are the sole index of ability assessment. A study by Hoyt (1968) attempted to provide generalized prediction

equations for specific subject areas using ATC scores and high school grades. It was found that the generalized equations were as accurate as the predictive efficiency of unique equations developed by various colleges and universities. With the diversification of assessment and placement measures, locally developed tests have come under scrutiny. Schade (1977) compared the correlational values between ACT sub-test scores and high school grades and found that together the two measures had a high predictive accuracy. A comparison study involving the Act English sub-test and DTLS, a test specifically designed to identify students who need remedial work in reading and language, validated the use of both instruments in the ability to account for an equivalent portion of variance in student grades (Snowman, et al., 1980). Another test, the Basic Skills Examination Test BSE, also showed equivalent prediction accuracy when compared to high school GPA and SAT-verbal scores for placement in English (Dwinell, 1985).

Finally, some research has been done in the area of gender differentiation because it has been observed that females perform better than males in the area of English as evidenced by higher mean scores on the ACT

English sub-test as well as higher grades in high school. A good basis for further gender differentiation of students was provided by Gamache and Novick (1985). The researchers examined gender bias in using ACT sub-test scores and other intellective variables to create prediction equations for a mixed population. The study showed that women were underpredicted in the subject area of English. Gamache and Novick pointed out that no predictive bias exists if the respective predictive relationships for minority, gender, and other groups were given by a common algorithm such as a regression line and associated standard error of prediction. However, if regression slopes, intercepts, or errors of standard estimate differ from the groups' values and the same score interpretation is made without regard to group membership, the placement decision made using those values is biased.

Competency in a subject area is multi-determined and there exists few methods for accurate assessment of ability. Tests employed by educators range from general grade trend assessments over a period of time to highly individualized tests of a specific skill. It is necessary to understand that if a student fails to

demonstrate competent knowledge when measured by means of a test of his or her ability, student failure can be due to the test. In other words, the usual method of competency assessment has the capability of failing the student as well as the student failing it. The question of internal validity causes a reverse in the logic of assessment measures and raises the question of test predictability.

Studies investigating the national decline in proficiency and the increase in the need for remedial programs have focused on educational reform and have raised the awareness of institutions in beginning research into their own programs. Abraham (1987) cites a study conducted by the U.S. Department of Education. One finding was that 16 to 25 percent of all college freshmen take a remedial course in reading, writing, or mathematics (U.S. Department of Education, 1985a). The fact that the U.S. Department of Education is beginning to research the decline in national proficiency is a step toward establishing whole system standards in education by gaining an understanding of the problem on a student level. Because higher education has been presented with such a problem, it must work to cause change on primary and secondary levels. Improving the

quality of primary and secondary education, while creating a better remedial approach to help those who were previously unsuccessful in a subject area was stated as one of the most important goals for the future in education by The Carnegie Foundation for the Advancement of Teaching (1977).

The purpose of level placement in college is to enter a student on a level at which he or she can successfully complete a course. The criteria by which an institution places a student at a particular level reveals those elements considered to be of the best predictive value for an individual or a group of individuals to pass a given level course. Conversely, student performance subsequent to placement serves as a test of the current placement criteria used by a college or university. It is important to question the validity of measurements used in student placement and to examine the interrelational affect of variables in order to construct the most accurate model of prediction. A college or university can be said to be progressive in the educational process when it is seen to recognize and then to implement better ways of serving the students who help it to grow.

As a first step in addressing the issue of decline

in proficiency, research on individual subject areas within a university setting may provide problem insight so that better procedures for proficiency assessment and level placement can be established. This study was designed as a part of a body of research recently requested by the Southern Regional Education Board (Abraham, 1987) in order to provide academic information based on the need for research into areas of scholastic decline. The main objective is to profile the subject area of English using intellective and non-intellective measures of assessment. In addition, the study will provide an answer to the question of student preparedness from high school to college. The ACT sub-scores, English GPA, overall GPA, and English units from high school are variables involved in proficiency assessment. A list of non-intellective variables appears in Tables 15 and 16 of the results section. English placement and grades in English 003, English Composition 101, and English Composition 102 are variables examined in the relationship to the measures of assessment. It is expected that following the analysis, new variables will emerge to take the place of those presently used for English placement and that accurate prediction

equations will be developed utilizing these variables.

In order to profile the subject area and to test the stated hypotheses, a comprehensive approach to the study of English is emphasized. Descriptive and hypothetical features represent an attempt to holistically examine the current status of English proficiency and placement of a large population at a four-year university. Only by systematic comprehensive evaluation of the subject area of English can higher education begin to understand and provide a means by which to remedy the decline in proficiency.

Method

Subjects

Subjects were 922 undergraduate freshmen who matriculated at a southern university between 1984 and 1985. There were 485 male and 436 female students ranging in age from 18 to 39 with a mean age of 20 years. Selection was by computer from a large student data file. Students who completed high school with a general education diploma from the General Education Development (GED) Testing Program were omitted from the sample due to the absence of ACT scores within the academic records. All students were treated in accordance with the Family Educational and Privacy Act of 1974.

Materials

Materials included confidential records reflecting the academic history of students prior to admission, education records of grades for the freshman year of residence at the university, standardized instructions of the university English level placement equations, and the Statistical Package for the Social Sciences, SPSS (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975) for the Sperry Univac 1100.

The university admission requirement states that the student should have four units of high school course work in English. Courses to remedy entrance deficiencies must be completed during the first year of enrollment and may not be used to satisfy degree requirements. Students who have deficiencies participate in a special services program consisting of tutoring, testing, developmental skills, counseling, and advising with the purpose of "helping students improve their chance of completing their college education."

Table 1 provides course descriptions for the subject area of English and Table 2 lists the current placement procedure used by the university under study. There is one model for predicted success in English 101

thus all students must equal or exceed the minimum requirements of both an ACT sub-score of 18 and an English GPA of 2.0. If a student falls below either measure he or she is placed in English 003. However, if a student graduated from high school more than five years prior to matriculation at the university, the ACT English sub-score is no longer used and the only means for placement is the English GPA from high school. Once a student is placed in English 003, the grade of "S" (satisfactory) must be received before exiting the course and before the student is allowed to enter English 101. In addition, the student must fulfill this requirement as well as the college-level English courses before becoming a candidate for graduation.

Insert Tables 1 and 2 about here

Procedure

The research design employed variables derived from student performance both in high school and college thus examining interactions between variables and providing a descriptive analysis of student performance in remedial and college level courses. Execution of research involved computer

selection of an approximately equal number of male and female students who had completed the freshman year of college. Cumulative student records from high school were obtained for the sample, and both grades and demographic information for each student were recorded onto data sheets.

A final data file was created by combining information from high school and college records. Data were organized for processing by SPSS (Nie, et al., 1975) and entered on to a computer tape to be read and analyzed. Data were then processed using the following SPSS subprograms: Frequencies, Crosstabs, Nonpar Corr, New Regression, and Oneway Anova.

Results

Analysis of intellective variables and student characteristics revealed that the English GPA and the ACT English sub-test score as well as an additional factor, overall GPA, were significantly involved in the prediction of level proficiency of students in the subject area of English. Prediction equations were derived from linear regression analyses using the variables that emerged to most significantly account for the variance in English course grades.

The Pearson Product Moment Correlation revealed

that English GPA r = .44, p <.000, Overall GPA r = .42, p <.000, and the ACT English sub-test score r = .33, p <.000 had the highest correlations with course grades in English. The English remedial grades showed a significant negative correlation with English units as well as with English placement in college r = -.25, p <.002; and r = -.29, p <.000. The overall GPA had the highest correlation with English remedial grades r = .29, p <.000, while the English GPA correlated strongest with English 101 and English 102 courses r = .43, p <.000; and r = .44, p <.000. However, the coefficient for overall GPA r = .42, p <.000 fell close to the values for English GPA. Significance levels and correlation coefficients are shown in Table 3, while correlations among the three strongest predictor variables are given in Table 4. The matrix in Table 4 shows significant correlations among all the variables; however the strongest correlation is between English GPA and overall GPA r = .86, p <.000. The ACT English sub-score correlated highest with English placement r = .59, p <.000.

Insert Tables 3 and 4 about here.

The results of stepwise multiple regression analyses are shown in Tables 5, 6 and 7 in which the strongest intellective variables were combined to produce equations with English course grades and English placement. The first regression made use of many intellective and non-intellective variables in order to detect those that did not add substantially to the predictive accuracy of the equation. Once this was accomplished, a regression analysis was made including the overall GPA, English GPA, and the ACT English sub-score. This served to both simplify the prediction equation and to insure the use of values with the greatest predictive accuracy. The Tables 5, 6, and 7 represent the various multiple regressions obtained by use of only those variables that fell within the significant limits.

Insert Tables 5, 6, and 7 about here

It can be seen that the combination of overall GPA and the ACT English sub-score account for 15% of the variance in the remedial English course grades. The ACT score contributed only four percent of the significant variance in prediction and the English GPA

was not significant in predicting remedial grades. The amount of variance outside the contribution of this combination was 85%. The English 101 grades were predicted by a combination of the English GPA, ACT English sub-score and the overall GPA. Results indicate that 22% of the variance in course grades can be predicted by this combination. The ACT score adds only three percent and the overall GPA adds only one percent of significant variance to the combination. Variance unaccounted for in English 101 grades was 78%. The English 102 grade was predicted by a combination of the English 101 grade, English GPA, and the ACT English sub-score. Twenty-six percent of the variance was accounted for by the English 101 grade, six percent was contributed by English GPA, and the ACT score accounted for only one percent of the significant variance. Regression analysis involving English placement revealed that the variable used most often in placement was the ACT English sub-test score. Although the score was significant, both overall GPA and English GPA were seen to contribute the greatest amount of predictive accuracy in student grades. A linear equation in the form of $\underline{Y} = \underline{M}_1\underline{x}_1 + \underline{M}_2\underline{x}_2 + \underline{M}_3\underline{x}_3 + \underline{B}$ was used to formulate more accurate prediction equations for each

of the courses in English, which are presented in Table 8.

Insert Table 8 about here

The results of analysis of variance showed gender differences for English 101 grades $F(1, 713) = 21.37, p < .000$ and English 102 grades $F(1, 340) = 10.73, p < .001$, while no significant gender difference was found for English remedial grades. Table 9 gives means and standard deviations for population and gender differentiated grades. English grades ranged within the four point scale with the number five indicating that the student withdrew from the course. In all courses the females performed better than the males as indicated by higher grades.

Insert Table 9 about here

Gender differentiated regression analyses showed that females gained no significant variance in the English 101 course grade from predictions made using the English GPA, while males gained no significant variance in predictions of the English 102 grade from

predictions using the ACT English sub-test score. Presented in Table 10 are gender differentiated regression equations. The percent of unique variance in course grades contributed by each significant intellective variable revealed further differences between males and females. A gender comparison of $\underline{R}^2$ values is seen in Table 11. For females, the English 101 grades accounted for 37% of the variance in the English 102 grades, while for males the English 101 grades accounted for only 15% of the variance in the subsequent English 102 grades. By adding the ACT English sub-test score for females and the English GPA for males to these values respectively, there is a six percent gain in prediction accuracy for each gender. When females reach the level of English 102, 45% of the significant variance in that course grade can be accounted for by the combination of the English 101 grade, the ACT English sub-test score, and the English GPA. The English 102 course grade for males varies 22% due to the combination of English 101 grades and the English GPA. In English 102 grade prediction, the ACT English score and overall GPA were not significant for males.

Insert Tables 10 and 11 about here

Cross tabulations were performed to assess student performance based upon performance in previous level courses. Results showed that of the 170 students placed in remedial English, 128 individuals completed the course. The grade of satisfactory was received by 78% and the grade of unsatisfactory was received by 22%. Of the students who successfully completed remedial English, 43 individuals went on to complete English 101 and 18 individuals completed English 102. Grades for these students are seen in Table 12. While only 33% of the original sample completed college-level courses, it can be seen that for English 101 77% and for English 102 71% performed college-level work receiving the grade of "C" or better while on the average, 26% needed further remedial work. Subsequent grades for students placed in English 101 are shown in Table 13. Results reveal that of the 736 students placed in college-level English, 297 individuals completed both English 101 and English 102. The grade matrix in the Table shows performance consistency among students as indicated by the majority receiving the same grade in both courses. The only performance

improvement was made by 8% of those who received the grade of "D" in the English 101 course. Those students received a one letter grade improvement in the subsequent English course.

Insert Tables 12 and 13 about here

Table 14 represents a race breakdown of students placed in remedial and college-level English courses compared to the racial distribution of the total population. It can be seen that minority students compose 12.2% of the total population, but make up 26% of those enrolled in the remedial level English course and 9.4% of those enrolled in the college-level course. However, race was not found to be a significant variable in English placement.

Insert Table 14 about here

A list of intellective and non-intellective variables selected to profile the population appears in Table 15 along with the descriptive symbol and range. Table 16 contains the actual profile of those variables including the means and percentages of the total

population of the 922 students. The profile includes variables found to be both significant and non-significant in relation to placement and prediction of grades in the subject area of English.

Insert Tables 15 and 16 about here

Discussion

One of the objectives of this study has been to profile student performance in the subject area of English. However, because of the problem of scholastic decline and the necessity of a large amount of remediation, the level placement of students continues to be of particular concern. Attention is focused on recent research that revealed that both placement procedures and college-level work are far from standardized among institutions of higher education (Abraham, 1987). This research was done in hopes of rectifying the incongruity by profiling placement and students at a four-year university and examining the relationships of many variables to the prediction of academic performance. By means of analysis involving a large population, those variables which should or should not be used in English placement emerged

along with the respective accuracy of prediction.

Analysis revealed that an additional variable, overall GPA, was important in the prediction of English grades and possessed greater significance than either English GPA or the ACT English scores. The linear combination of variables in the prediction of remedial grades involved the overall GPA and the ACT English sub-score. An analysis of variance showed that there was a significant difference between males and females for grades in English 101 and 102 and thus provided the basis for the development of separate prediction equations for each gender. As stated by Gamache and Novick (1985) in the subject area of English a gender bias is often found in predicting grades with females being underpredicted for performance. Differing regression slopes indicate that the variable in question may differentially predict the criterion for the population depending on the cut-off score. Differing intercepts with identical slopes indicate that the gender with the larger intercept is underpredicted by the use of a common prediction equation.

In this study, females were found to possess differing values of both slope and intercept, as well

as differing variables in the prediction of grades. The English 101 grade for females was predicted by overall GPA and the ACT English sub-score. The grade for English 101 for males involved the overall GPA, ACT English sub-score, and the English GPA. The prediction equation for females in English 102 was the English 101 grade, ACT English sub-score, and the English GPA. While for males, the equation was the English 101 grade and the English GPA. Findings indicated that English placement should be made in consideration of these differences and that for females the inclusion of English GPA in placement is not significant. The finding that the ACT English sub-test score was less accurate in predicting grades both in common and gender differentiated equations, than was overall GPA and English GPA from high school, gives good support for replacement of the old placement equation in which there is emphasis on the use of this variable as a primary determinant with English GPA, and no use of the variable overall GPA.

It was found that English remedial grades had significant negative correlations with English units and English placement in college. While these variables did not contribute to variance in remedial

grades when analyzed by step-wise multiple regression, an explanation was found by comparing remedial and non-remedial students and the number of English units from high school. Often the remedial student matriculated with less than the mean, hence the negative correlation. Because remedial students also matriculated with extremely low ACT English scores, and the university used this variable as the primary means of placement with English GPA, a negative correlation would be possible.

The answer to the question of whether students are being adequately prepared during high school to meet with success in college English courses, can be answered not only by evaluating the performance of students in college courses, but also by looking at the amount of students who appear to need remedial work and how they perform subsequently. This study indicated that indeed there are many students who arrive unprepared to succeed in English, but the original definition of a remedial student and the building blocks conception of learning were supported by the fact that two-thirds of the remedial students who took college-level English were able to perform as well as non-remedial students. However, few remedial students

in the sample completed both courses and the question must be asked in reference to both remedial and non-remedial students if the grade of "C" is considered to reflect success. In the case of the remedial student who started with a low proficiency in the subject is it possible that success was accomplished. But, in the case of the non-remedial student the success factor must be evaluated with the mean academic history of the population in mind. Profile results indicated that the population under study showed mean ACT English scores which exceed the national average as well as high grades in English from high school and a high overall GPA. For these students it is doubtful that success occurred and this is further supported by the fact that little to no improvement in writing skills occurred in the second college-level English course.

After examination of student performance in the subject area of English and the discovery of the values that express the linear relationship of the variables found to significantly contribute to the variance in grades, a wide amount of variance was left unaccounted for by analysis with many intellective and non-intellective variables. Variables such as race and

high school type were not significant in the prediction of grades and results utilizing the significant variables left more than three quarters of the variance unexplained. This finding is in agreement with much of the past research that has shown similar amounts of variance which were unexplained by test measures (Lavin, 1965; Palmer, 1966; Snowman, et al., 1980; and Dwinell, 1985). This study shows that a large combination of variables including those discussed in many studies by Lavin (1965) do not contribute to the variance of student grades which implicates variables of student personality as being predominant elements of success. The main focus of analysis is the evaluation and measurement of the general dependence of a variable on a set of other variables. But, when the precentage of the unpredicted variance exceeds the predicted variance by a three to one margin, another means of prediction must be investigated. The variables of motivation and persistence may constitute the remaining variability in student grades. The use of these variables in grade prediction was supported by Grabe and Latta (1981) while the use of measures involving variables such as study habits and learning processes was not significant in relation to student grades

(Wikoff and Kafka, 1981; and Watkins, 1986).

In conclusion, the admission and placement of students, as well as the level curriculum within an institution are all essentially based upon hypotheses. Every educational institution has the responsibility of testing the major hypotheses upon which it operates programs of study. In addition, that responsibility must be carried over into adding to the fund of tested principles upon which schools, colleges, and universities may better operate in the future. It is important to provide information to individual students which effectively guides them in realizing the optimum way in which to pursue fulfillment of scholastic goals and best approximate their potential. Educational objectives of the ideas, skills, and techniques that are to be developed and demonstrated by assessment methods must be defined and investigated as to how far the objectives of a program are being realized. This study provided a comprehensive view of students in the subject area of English, evaluated student preparedness from high school, analyzed the effectiveness of assessment measures and other variables in college placement, and finally examined college grades in light of the extensive knowledge about all of these factors

asking in what way the program of study changed those who passed through it.

To date, little research has been done to address the issues of standardization of programs of study in higher education. It is felt that the lack of communication in research is a contributing factor in the continuation of the problem. Because the few existing measures of student proficiency that are traditionally used account for little of the significant variance in course grades, the most promising area of research may lie in the investigation and development of student motivation and student persistence measures. From this educators can learn ways in which to counsel and aid students in increasing these factors which seem to be the tools by which all educational goals are reached.

References

Abraham A. A. (1987). A report on college level remedial developmental programs in SREB states. Atlanta, GA: Southern Regional Education Board.

The Carnegie Foundation for the Advancement of Teaching. (1977). Missions of the college curriculum: A contemporary view with suggestions. San Francisco: Jossey Bass Publishers.

Dwinell, P. L. (1985). The validation of variables used in the placement and prediction of academic performance of developmental students. (Report No. TM-850-431). Chicago, IL: Annual Meeting of the American Educational Research Association (ERIC Document Reproduction Service No. 260 109).

Gamache, L. M. & Novick, M. R. (1985). Choice of variables and gender differentiated prediction within selected academic programs. Journal of Educational Measurement, 22(1), 53-70.

Grabe, M. & Latta, R. M. (1981). Cumulative achievement in a mastery instructional system: The impact of differences in resultant achievement motivation and persistence. American Educational Research Journal, 18(1), 7-13.

Hoyt, D. P. (1968). Generalized academic prediction in four-year colleges. Personnel and Guidance Journal, 47(2), 130-136.

Lavin, D. E. (1965). The prediction of academic performance. New York: Russell Sage Foundation.

Myers, M. (1983). Remedial education in college: The problem of under-prepared students. Issues in Higher Education. Atlanta, GA: Southeast Regional Education Board.

Nie, N. H., Hull, D. H., Jenkins, J. G., Steinbrenner, K., & Bent, D. H. (1975). Statistical package for the social sciences (2nd Ed.) (Computer Manual). New York: McGraw-Hill Book Company.

Palmer, O. (1966). Sense or nonsense? The objective testing of English composition. In C. I. Chase & H. G. Ludlow (Eds.), Readings in Educational and Psychological Measurement (pp. 284-291). Boston: Houghton Mifflin Company.

Schade, H. C. (1977). The ability of the ACT and the MCPT to predict the college grade point average. (Report No. JC-800-340). Neosho, MO: Crowder College, Institutional Research Report. (ERIC Document Reproduction Service No. ED 188 683).

Snowman, J., Leitner, D. W., Snyder, V., & Lockhart, L. (1980). A comparison of the predictive validities of selected academic tests of the American College Test (ACT Assessment Program and the Descriptive Tests of Language Skills for college freshmen in a basic skills program. Educational and Psychological Measurement,. 40(4), 1159-1166.

Watkins, D. (1986). Learning processes and background characteristics as predictors of tertiary grades. Educational and Psychological Measurement, 46, 199-203.

Wikoff, R. L. & Kafka, G. F. (1981). The effectiveness of the SSHA in improving prediction of academic achievement. Journal of College Student Personnel, 22, 162-166.

U. S. Department of Education, National Center for Education Statistics. (1985a). Many college freshmen take remedial courses. Bulletin.

Table 1

Course Descriptions for English

003* Basic English (or) Reading Comprehension II

Reading skills necessary for success in college. Required for students whose placement test score or class performance indicates the need of remedial work.

*002 Reading Skills I

A basic skills course offered for for those not yet at the 003 level

101 Freshman Composition

Emphasis on writing, including at least one documented paper; readings in the essay and other non-fiction prose models.

102 Freshman Composition

Emphasis on writing related to close critical reading of fiction, drama, and poetry.

Table 2

Current English Placement Model

Level Placement	ACT English Sub-score Percentile	English GPA High School	Overall GPA High School	English Units/ Years
003	Score < 18	GPA < 2.0	--	4
101	Score ≥ 18	GPA ≥ 2.0	--	4

Note. The ACT English score is not used for placement if high school graduation was more than five years prior to admission.

Table 3

Correlation Coefficients and Significance Levels Between Intellective Variables and College Course Grades

	Independent Variables							
	ACTEH	ACTMA	ACTSOC	ACTNAT	EHUNITS	EHGPA	OVERGPA	EHPLACEMENT
Dependent Variables								
EHRemGrad	.1512	--	--	.1570	-.2526	.1840	.2879	-.2910
	$p < .04$	NS	NS	$p < .043$	$p < .002$	$p < .018$	$p < .000$	$p < .000$
EH101Grad	.3068	.1755	.1955	.1057	--	.4279	.4217	.1958
	$p < .000$	$p < .000$	$p < .000$	$p < .003$	NS	$p < .000$	$p < .000$	$p < .000$
EH102Grad	.3255	.1973	.2520	.1517	--	.4354	.4183	.1825
	$p < .000$	$p < .000$	$p < .000$	$p < .003$	NS	$p < .000$	$p < .000$	$p < .000$

Table 4

Intercorrelations Among the Three Strongest Independent Variables and English Placement

	Overall GPA	English GPA	ACT English	Placement
Overall GPA	--	.8596	.3913	.3497
		$p < .000$	$p < .000$	$p < .000$
English GPA		--	.4153	.3495
			$p < .000$	$p < .000$
ACT English			--	.5923
				$p < .000$
Placement				--

Table 5

Regression Analysis for English Remedial Grade

	R^2	Degrees of Freedom		ANOVA		Linear Regression			
		Regression	Residual	F	Sig. F	Slope	Intercept	T	Sig. T
Overall GPA	.1111	1	166	20.76	.000	1.300	*	4.25	.000
ACT English	.1555	2	165	15.20	.000	.1646	*	2.94	.000

Note. Intercept -.2098

Table 6

Regression Analysis for English 101 Grade

	R^2	Degrees of Freedom		ANOVA		Linear Regression			
		Regression	Residual	F	Sig. F	Slope	Intercept	T	Sig. T
English GPA	.1833	1	712	159.87	.000	.3477	*	3.39	.000
ACT English	.2159	2	711	97.91	.000	.0491	*	5.22	.000
Overall GPA	.2264	3	710	69.27	.000	.3215	*	3.10	.002

Note. Intercept -.6118

Table 7

Regression Analysis for English 102 Grade

	R^2	Degrees of Freedom		ANOVA		Linear Regression			
		Regression	Residual	F	Sig. F	Slope	Intercept	T	Sig. T
English 101	.2634	1	311	111.25	.000	.4581	*	7.10	.000
English GPA	.3288	2	310	75.92	.000	.4168	*	4.86	.000
ACT English	.3380	3	309	52.60	.000	.0271	*	2.08	.03

Note. Intercept -.6661

Table 8

Prediction Equations for Course Grade in English

Course	Equation
English 003	$\underline{Y}$ = -.2098 + 1.300 (Overall GPA) + .1646 (ACT English)
English 101	$\underline{Y}$ = -.6118 + .3477 (English GPA) + .0491 (ACT English) + .3215 (Overall GPA)
English 102	$\underline{Y}$ = -.6661 + .4581 (English 101) + .4168 (English GPA) + .0271 (ACT English)

Note. Equation form $\underline{Y} = \underline{M}_1\underline{x}_1 + \underline{M}_2\underline{x}_2 + \underline{M}_3\underline{x}_3 + \underline{B}$

Table 9

One Way Analysis of Variance of Grades by Gender

	n	M	$\hat{S}$
English Rem Grade			
Male	76	3.69	2.19
Female	53	4.24	1.80
Total	129	3.92	2.05
English 101 Grade			
Male	378	2.29	1.12
Female	337	2.65	0.92
Total	715	2.46	1.05
English 102 Grade			
Male	188	2.20	0.95
Female	154	2.55	1.04
Total	342	2.36	1.01

Table 10

Gender Differentiated Regression Equations for Course Grade Prediction

	FEMALES
English 101	$\underline{Y}$ = -.1377 + .5000 (Overall GPA) + .0577 (ACT English)
English 102	$\underline{Y}$ = -1.0519 + .5088 (English 101) + .0591 (ACT English) + .3128 (English GPA)
	MALES
English 101	$\underline{Y}$ = -.7633 + .3646 (Overall GPA) + .0461 (ACT ENGLISH) + .3451 (English GPA)
English 102	$\underline{Y}$ = -.0675 + .3790 (English 101) + .4376 (English GPA)

Table 11

Gender Comparison of R^2 Values

Course	Variable	R^2 Male	R^2 Female	Differential
EH 101	OverGPA	.1779	.1591	.0188
	ACT EH	.2061	.2075	.00014
	EH GPA	.2177	NS	--
EH 102	EH 101 Grade	.1554	.3695	.2141
	ACT EH	NS	.4285	--
	EH GPA	.2196	.4546	.2350
	Overall GPA	NS	NS	--

Table 12

Subsequent Course Grades for Remedial Students

Grade	Course	
	EH 101 n = 43	EH 102 n = 28
A	4.6%	--
B	25.6%	17.8%
C	46.5%	53.6%
D	23.3%	28.6%
F	--	--

Table 13

Matrix of Subsequent Course Grades for College Level Students

	English 102 Grade				
Grade EH 101	A	B	C	D	F
A	48.6%	43.2%	2.7%	5.4%	--
B	10.9%	52.2%	31.9%	5.1%	--
C	2.1%	25.8%	53.6%	18.6%	--
D	0.0%	4.0%	52.0%	44.0%	--

Table 14

Racial Composition of the Population in Level Courses Compared to the Total

	Population	English Courses	
Race	Total	003	101
White	87.5%	74%	91%
Black	9.1%	20%	7%
Hispanic	0.9%	2%	0.2%
Asian	2.1%	3%	2%
American Indian	0.2%	--	0.2%
Non-Resident	0.2%	1%	--
Total	100.%	100%	100%

Table 15

Intellective and Non-Intellective Variables

Variable	Symbol	Descriptive/Range
Age	Age	18 - 39 years
Sex	M, F	Male - Female
Race	C,B,As,H	Caucasion, Black, Asian, Hispanic
	AmI,NR	American Indian, Non-Resident
High School Type	HS Type	City, County, Public
English Units	EH Unit	1 - 4 years
English Grade Point Average (H.S.)	EHGPA	1.0 - 4.0
Overall Grade Point Average (H.S.)	OverGPA	1.0 - 4.0
ACT English Subtest Score	ACTEH	5 - 33
Graduation Year (H.S.)	GrdYr	1966 - 1986
Matriculation Year (Col)	MatYr	1985 - 1986
English Placement (Col)	EHPlace	003, 101, 102
School (Col)	E,Sci,AHS	Engineering, Science, Arts/Humanities/Social
	Sp,ADSC,NU	Sciences, Special Student, Administrative Science, Nursing

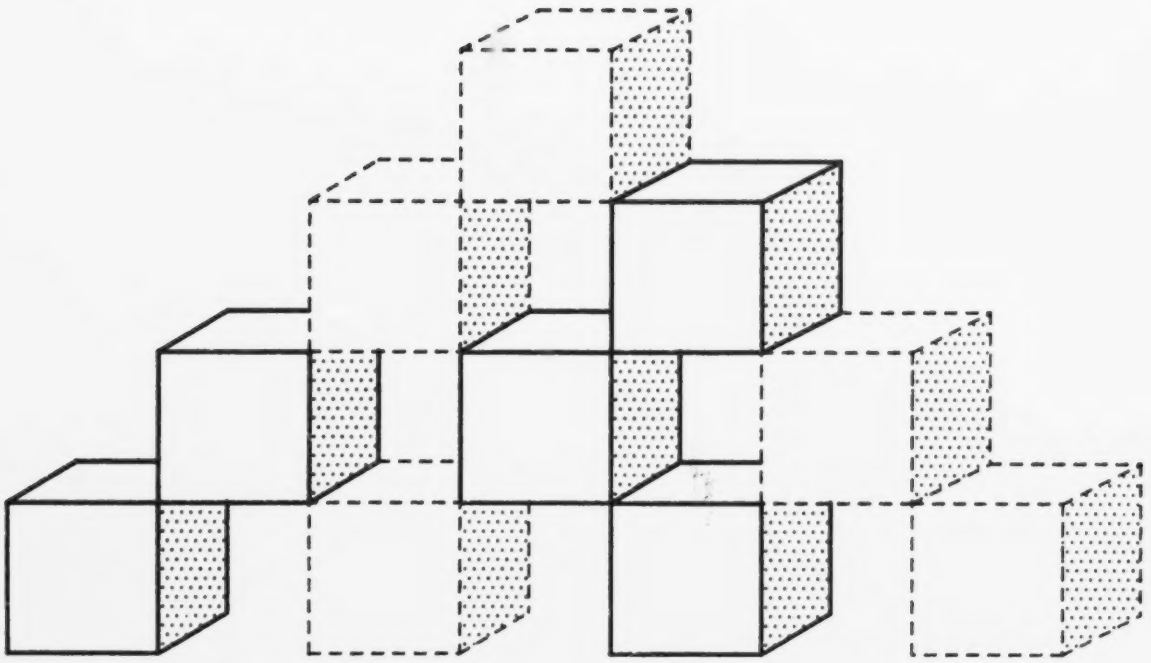
Table 16

Population Profile

Variable	Mean						Row Total
Age	20	18-21 = 92%	22-39 = 8%				100%
Sex	Male	M = 53%	F = 47%				100%
Race	C	C = 87.5%	B = 9.1%	As = 2.1%	H = .9%	AmI = .2%	NR + .2%	100%
HSType	City	City = 76%	Co. = 17%	Pr. = 7%				100%
EH Unit	4 yrs	1-2yr = 1%	3yr = 6%	4yr = 93%				100%
EH GPA	3.0	1.0 = 2%	2.0 = 18%	3.0 = 53%	4.0 = 27%			100%
Over GPA	3.0	1.0 = 2%	2.0 = 22%	3.0 = 53%	4.0 = 23%			100%
ACT EH	21	5-17 = 21%	18-25 = 67%	26-33 = 12%				100%
Grad.	1985	85-86 = 89%	80-84 = 9%	6-79 = 2%				100%
Matdate	Fall/85	F85 = 50%	F86 = 41%	Wi85 = 3%	Sp85 = 3%	Su86 = 3%		100%
EH Place	101	003 = 18%	101 = 80%	102 = .5%				100%
School	E	E = 26%	Sci = 21%	AHS = 19%	Sp = 16%	ADSC = 155	N = 3%	100%

Figure Caption

Figure 1. The skill acquisition/building blocks model of learning.



62